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(57) **ABSTRACT**

An integrated circuit having capacitive elements for smoothing a supply voltage is described. In this case, at least one additional metal electrode, which is configured as a high frequency-optimized capacitance and is distinguished by an extremely low sheet resistance, is connected in parallel with the MOS capacitances. By connecting the areally highly effective MOS capacitance, which, however, is connected with a somewhat higher impedance, in parallel with areally less effective metal capacitances, which, however, are connected to the supply voltage in a very low-impedance manner, it is possible to obtain broadband buffering and thus decoupling of high-frequency interference signals. Very high-frequency interference components are attenuated on the chip and do not pass into the system surrounding the integrated circuit.

**12 Claims, 3 Drawing Sheets**

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